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United States Patent [19][11] **Patent Number:** **5,612,691****Murmann et al.**[45] **Date of Patent:** **Mar. 18, 1997**[54] **ERGONOMIC KEYBOARD**

FOREIGN PATENT DOCUMENTS

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9318500 9/1993 WIPO 345/168

OTHER PUBLICATIONS

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Auerbach, GermanyPC World, May 1993, "Weird Keyboards: Rx for Hands?"
Key Tronic; "FlexPro"; 1993.[21] Appl. No.: **397,472***Primary Examiner*—Thomas Mullen
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Attorney, Agent, or Firm—Klaus J. Bach[22] Filed: **Mar. 2, 1995**[30] **Foreign Application Priority Data**[57] **ABSTRACT**

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[51] **Int. Cl.⁶** **H03K 17/94**; H03M 11/00[52] **U.S. Cl.** **341/22**; 345/168; 400/489[58] **Field of Search** 341/23, 22; 345/156,
345/168; 400/489, 82[56] **References Cited**

U.S. PATENT DOCUMENTS

5,067,834	11/1991	Szman	et al.	400/489
5,156,475	10/1992	Zilberman		400/472
5,161,760	11/1992	Terbrack		345/168 X
5,228,791	7/1993	Fort		400/489
5,318,367	6/1994	Braun	et al.	400/82
5,342,005	8/1994	Szman	et al.	400/489 X
5,351,066	9/1994	Rucker	et al.	345/168
5,361,082	11/1994	Chung		345/168
5,388,921	2/1995	Chung		400/472
5,393,150	2/1995	Fort		400/489

In an ergonomic keyboard comprising at least two housing sections with separate key pads wherein the two housing sections are interconnected by a joint permitting pivoting and also tilting of the two housing sections relative to each other, the joint comprises a coil spring which extends between, and is connected to, the two housing sections at the end of the housing sections remote from an operator so as to form a universal joint between the two housing sections, and a sector-shaped indexing plate is mounted with one end firmly to one of the housing sections and extends into the other housing section so that it bridges any gap formed between the two housing sections when they are pivoted apart, and the other housing section has a guide pin projecting into a partial circular guide slot formed in the indexing plate and having a center of curvature coinciding with the universal joint pivoting center for guiding the two housing sections relative to each other.

12 Claims, 7 Drawing Sheets